



**HENRY**  
TECHNOLOGIES

# Suction Accumulators

## The SA Series

FEATURES

Suitable for use with  
HCFC, HFC and CO<sub>2</sub>  
Refrigerants

Solid Copper  
Connections

Prevents Liquid  
Slugging

Maximum Working  
Pressure of 31 Barg

Cost Effective

Powder-Coated  
Finish



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**HENRY**

DESIGNED FOR PERFORMANCE

# SUCTION LINE ACCUMULATORS SA SERIES

**The main purpose of a Suction Line Accumulator is to prevent a sudden surge of liquid refrigerant or oil from returning down the suction line and into a compressor. The suction line accumulator is a temporary reservoir for liquid refrigerant and oil.**

The accumulator is designed to meter both the liquid refrigerant and oil back to the compressor at a controlled rate. This prevents compressor damage. By metering the liquid refrigerant and oil back to the compressor, the accumulator also helps maintain system efficiency and proper crankcase oil levels.

## Applications

Suction line accumulators are installed in air conditioning and refrigeration systems where a sudden surge of liquid down the suction line is possible. The product range is designed for use with HCFC, HFC and CO<sub>2</sub> refrigerants, along with their associated oils.

## How it works

Refrigerant vapour from the evaporator enters the suction line accumulator, along with any liquid refrigerant oil. The outlet side of each accumulator is designed to allow refrigerant vapour to return to the compressor. The vapour return is achieved by a special U tube arrangement. On certain models, a tube within a tube arrangement is used as an alternative. Liquid is held at the bottom of the accumulator and is metered to the compressor via a screened orifice at the bottom of the tube. Metering of liquid will only occur when the compressor is running.

## Main Features

- Prevents liquid slugging
- Controlled liquid return
- Large flow capacity
- Low pressure drop
- Screen protected orifice
- Solid copper connections
- Powder-coated finish
- Cost effective

## Technical Specification

MWP = 31 barg

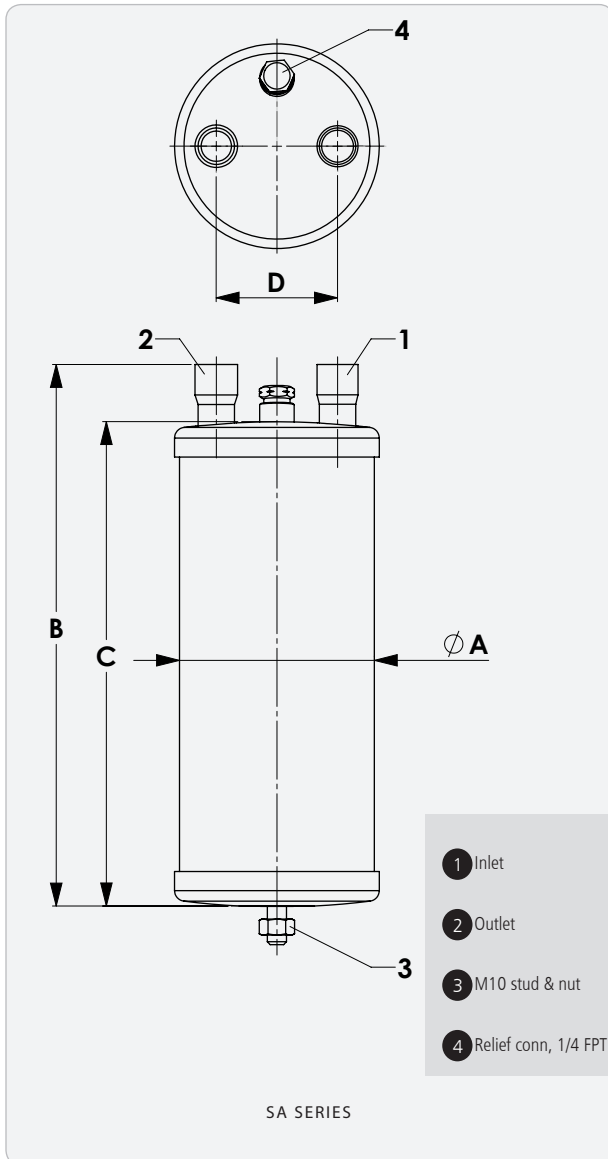
Allowable operating temperature = -30°C to +50°C

## Materials of Construction

The shell and end caps are made from carbon steel. Branch connections are made from copper.



| Part No  | Conn Size (inch) | Dimensions (mm) |     |     |      | Weight (kg) | CE Cat |
|----------|------------------|-----------------|-----|-----|------|-------------|--------|
|          |                  | Ø A             | B   | C   | D    |             |        |
| SA-7044  | 1/2 ODS          | 102             | 163 | 138 | 63.5 | 2           | SEP    |
| SA-7045S | 5/8 ODS          | 102             | 167 | 138 | 63.5 | 2           | SEP    |
| SA-7045  | 5/8 ODS          | 102             | 278 | 249 | 63.5 | 2.9         | Cat I  |
| SA-7046  | 3/4 ODS          | 102             | 281 | 249 | 63.5 | 2.9         | Cat I  |
| SA-7056  | 3/4 ODS          | 127             | 252 | 222 | 70   | 3.6         | Cat I  |
| SA-7057S | 7/8 ODS          | 127             | 256 | 222 | 70   | 3.6         | Cat I  |
| SA-7057  | 7/8 ODS          | 127             | 378 | 344 | 70   | 5.1         | Cat I  |
| SA-7051  | 1 1/8 ODS        | 127             | 476 | 438 | 70   | 6.3         | Cat I  |
| SA-7053  | 1 3/8 ODS        | 127             | 479 | 438 | 75   | 6.3         | Cat I  |
| SA-7065  | 1 5/8 ODS        | 152             | 678 | 633 | 75   | 13          | Cat II |



## SUCTION LINE ACCUMULATORS

### Selection Guidelines

The accumulator should have adequate holding capacity. Normally, this should not be less than 50% of the total system charge.

The system designer should check that the minimum and maximum system refrigeration capacities are within the limits of the accumulator. The maximum kW capacities are based on accumulator pressure loss and oil return. The pressure loss is equivalent to a maximum of 1/2°C. The minimum kW capacities are to ensure proper oil return.

### Example:

Refrigerant R404A

System maximum refrigerant capacity = 12 kW

Evaporating temperature = -18°C

System charge = 8 kg

Recommended accumulator is model SA-7051 with a refrigerant holding capacity of 5.4 kg and a maximum rating of 13.2 kW.

### Additional Selection Information

Two accumulators can be piped in series to increase holding capacity. Oil will be metered from one accumulator to the next to ensure proper oil flow to the compressors. Adding a second identical accumulator will effectively double the holding capacity of a single accumulator.

Piping two identical accumulators in parallel will double the kW capacity. Two identical accumulators must be used.

On low temperature systems (-18°C and below) a heater band should be installed to help boil off the liquid refrigerant and aid oil flow. Do not add too much heat or there is a risk of overheating the compressors.

### Installation - Main Issues

1. Install the accumulator after the suction line filter.
2. A pressure relief device connection is fitted at the top of the vessel. The user must ensure that the vessel is protected from over-pressure.
3. Heater bands should be installed at the bottom of the accumulator.

| Part No  | Refrigerant Holding Capacity (kg at -18°C) |       |       | Recommended kW of refrigerant at Suction Evaporating Temp (°C) |      |      |      |      |       |      |      |      |      |            |      |      |      |      |     |
|----------|--|-------|-------|--|------|------|------|------|-------|------|------|------|------|------------|------|------|------|------|-----|
|          | R134a                                      | R407F | R404A | R134a  |      |      |      |      | R407F |      |      |      |      | R404A/R507 |      |      |      |      |     |
|          |  |       |       | 5°   | -7°  | -18° | -29° | -40° | 5°    | -7°  | -18° | -29° | -40° | 5°         | -7°  | -18° | -29° | -40° |     |
| SA-7044  | 1  | 1     | 0.9   | MAX  | 1.6  | 1.2  | 0.8  | 0.5  | 0.6   | 5.8  | 3.9  | 2.6  | 1.6  | 1          | 3.1  | 2.2  | 1.5  | 0.9  | 0.6 |
|          |  |       |       | MIN  | 0.3  | 0.2  | 0.2  | 0.2  | 0.1   | 1.7  | 1.1  | 0.7  | 0.5  | 0.3        | 0.5  | 0.3  | 0.3  | 0.2  | 0.2 |
| SA-70455 | 1  | 1     | 0.9   | MAX  | 3.2  | 2.3  | 1.5  | 1    | 0.6   | 10.5 | 7.1  | 4.7  | 2.9  | 1.7        | 6.3  | 4.3  | 2.8  | 1.8  | 1.1 |
|          |  |       |       | MIN  | 0.7  | 0.6  | 0.5  | 0.4  | 0.3   | 2.4  | 1.6  | 1    | 0.7  | 0.4        | 0.9  | 0.7  | 0.6  | 0.5  | 0.4 |
| SA-7045  | 2.1  | 2     | 1.9   | MAX  | 3.2  | 2.3  | 1.5  | 1    | 0.6   | 10.5 | 7.1  | 4.7  | 2.9  | 1.7        | 6.3  | 4.3  | 2.8  | 1.8  | 1.1 |
|          |  |       |       | MIN  | 0.7  | 0.6  | 0.5  | 0.4  | 0.3   | 2.4  | 1.6  | 1    | 0.7  | 0.4        | 0.9  | 0.7  | 0.6  | 0.5  | 0.4 |
| SA-7046  | 2.1  | 2     | 1.9   | MAX  | 4.5  | 3.1  | 2.1  | 1.4  | 0.8   | 14.4 | 9.7  | 6.4  | 4    | 2.4        | 8.7  | 5.9  | 3.8  | 2.5  | 1.5 |
|          |  |       |       | MIN  | 0.9  | 0.7  | 0.6  | 0.5  | 0.4   | 3.2  | 2.2  | 1.4  | 0.9  | 0.5        | 1.3  | 1    | 0.8  | 0.6  | 0.5 |
| SA-7056  | 2.8  | 2.7   | 2.5   | MAX  | 4.5  | 3.1  | 2.1  | 1.4  | 0.8   | 14.4 | 9.7  | 6.4  | 4    | 2.4        | 8.7  | 5.9  | 3.8  | 2.5  | 1.5 |
|          |  |       |       | MIN  | 0.9  | 0.7  | 0.6  | 0.5  | 0.4   | 3.2  | 2.2  | 1.4  | 0.9  | 0.5        | 1.3  | 1    | 0.8  | 0.6  | 0.5 |
| SA-7057S | 2.7  | 2.6   | 2.4   | MAX  | 7.7  | 5.4  | 3.6  | 2.3  | 1.4   | 24.2 | 16.3 | 10.7 | 6.7  | 4          | 14.9 | 10.2 | 6.5  | 4.2  | 2.6 |
|          |  |       |       | MIN  | 1.3  | 1.1  | 0.9  | 0.7  | 0.6   | 4.9  | 3.3  | 2.2  | 1.4  | 0.8        | 1.8  | 1.5  | 1.2  | 1    | 0.7 |
| SA-7057  | 4.6  | 4.4   | 4.1   | MAX  | 7.7  | 5.4  | 3.6  | 2.3  | 1.4   | 24.2 | 16.3 | 10.7 | 6.7  | 4          | 14.9 | 10.2 | 6.5  | 4.2  | 2.6 |
|          |  |       |       | MIN  | 1.3  | 1.1  | 0.9  | 0.7  | 0.6   | 4.9  | 3.3  | 2.2  | 1.4  | 0.8        | 1.8  | 1.5  | 1.2  | 1    | 0.7 |
| SA-7051  | 6.1  | 5.8   | 5.4   | MAX  | 16.3 | 11.4 | 7.3  | 4.8  | 2.9   | 49.8 | 33.4 | 22.1 | 13.8 | 8.2        | 31.4 | 21.7 | 13.2 | 8.6  | 5.2 |
|          |  |       |       | MIN  | 2.1  | 1.8  | 1.5  | 1.2  | 1     | 7.5  | 5    | 3.3  | 2.1  | 1.2        | 2.9  | 2.4  | 2    | 1.6  | 1.2 |
| SA-7053  | 6.1  | 5.8   | 5.4   | MAX  | 27.8 | 18.8 | 12   | 7.6  | 4.7   | 82.1 | 55.1 | 36.4 | 22.8 | 13.4       | 53.9 | 35.9 | 21.8 | 13.8 | 8.6 |
|          |  |       |       | MIN  | 4.4  | 3.7  | 3.1  | 2.5  | 2     | 15.8 | 10.6 | 7    | 4.4  | 2.6        | 6    | 4.9  | 4    | 3.2  | 2.5 |
| SA-7065  | 13.1                                       | 12.4  | 11.5  | MAX  | 49.3 | 33.8 | 21.1 | 13.4 | 8.2   | 145  | 97.4 | 64.4 | 40.2 | 23.7       | 95   | 64.1 | 38   | 24.3 | 15  |
|          |  |       |       | MIN  | 7.6  | 6.3  | 5.3  | 4.4  | 3.5   | 28.7 | 19.3 | 12.7 | 8    | 4.7        | 10.3 | 8.4  | 7    | 5.7  | 4.4 |

The information contained in this brochure is correct at the time of publication.

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It remains the responsibility of the system designer to ensure all products used in the system are suitable for the application.

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Date of publication:- May 2014

### Henry Technologies

76 Mossland Road Hillington Park  
Glasgow G52 4XZ Scotland UK

Tel. +44 141 882 4621

Fax. +44 141 810 9199

